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<110> Bujard, Herman
     Gossen, Manfred
     Salfeld, Jochen
     Voss, Jeffrey

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  Activator Fusion Proteins

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<141> 2001-02-05

<150> 09/163276
<151> 1998-09-29

<150> 08/479306
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 1   5   10   15

ctt aat gag gtc gga atc gaa ggt tta aca acc cgt aaa ctc gcc cag   96
Leu Asn Glu Val Gly Ile Glu Gly Leu Thr Thr Arg Lys Leu Ala Gln
             20   25   30

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aag cta ggt gta gag cag cct aca ttg tat tgg cat gta aaa aat aag    144
Lys Leu Gly Val Glu Gln Pro Thr Leu Tyr Trp His Val Lys Asn Lys
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cgg gct ttg ctc gac gcc tta gcc att gag atg tta gat agg cac cat    192
Arg Ala Leu Leu Asp Ala Leu Ala Ile Glu Met Leu Asp Arg His His
    50                  55                  60

act cac ttt tgc cct tta gaa ggg gaa agc tgg caa gat ttt tta cgt    240
Thr His Phe Cys Pro Leu Glu Gly Glu Ser Trp Gln Asp Phe Leu Arg
65                  70                  75                  80

aat aag gct aaa agt ttt aga tgt gct tta cta agt cat cgc gat gga    288
Asn Lys Ala Lys Ser Phe Arg Cys Ala Leu Leu Ser His Arg Asp Gly
            85                  90                  95

gca aaa gta cat tta ggt aca cgg cct aca gaa aaa cag tat gaa act    336
Ala Lys Val His Leu Gly Thr Arg Pro Thr Glu Lys Gln Tyr Glu Thr
            100                 105                 110

ctc gaa aat caa tta gcc ttt tta tgc caa caa ggt ttt tca cta gag    384
Leu Glu Asn Gln Leu Ala Phe Leu Cys Gln Gln Gly Phe Ser Leu Glu
        115                 120                 125

aat gca tta tat gca ctc agc gct gtg ggg cat ttt act tta ggt tgc    432
Asn Ala Leu Tyr Ala Leu Ser Ala Val Gly His Phe Thr Leu Gly Cys
    130                 135                 140

gta ttg gaa gat caa gag cat caa gtc gct aaa gaa gaa agg gaa aca    480
Val Leu Glu Asp Gln Glu His Gln Val Ala Lys Glu Glu Arg Glu Thr
145                 150                 155                 160

cct act act gat agt atg ccg cca tta tta cga caa gct atc gaa tta    528
Pro Thr Thr Asp Ser Met Pro Pro Leu Leu Arg Gln Ala Ile Glu Leu
                165                 170                 175

ttt gat cac caa ggt gca gag cca gcc ttc tta ttc ggc ctt gaa ttg    576
Phe Asp His Gln Gly Ala Glu Pro Ala Phe Leu Phe Gly Leu Glu Leu
            180                 185                 190

atc ata tgc gga tta gaa aaa caa ctt aaa tgt gaa agt ggg tcc gcg    624
Ile Ile Cys Gly Leu Glu Lys Gln Leu Lys Cys Glu Ser Gly Ser Ala
            195                 200                 205

tac agc cgc gcg cgt acg aaa aac aat tac ggg tct acc atc gag ggc    672
Tyr Ser Arg Ala Arg Thr Lys Asn Asn Tyr Gly Ser Thr Ile Glu Gly
    210                 215                 220

ctg ctc gat ctc ccg gac gac gac gcc ccc gaa gag gcg ggg ctg gcg    720
Leu Leu Asp Leu Pro Asp Asp Asp Ala Pro Glu Glu Ala Gly Leu Ala
225                 230                 235                 240

gct ccg cgc ctg tcc ttt ctc ccc gcg gga cac acg cgc aga ctg tcg    768
Ala Pro Arg Leu Ser Phe Leu Pro Ala Gly His Thr Arg Arg Leu Ser
            245                 250                 255

acg gcc ccc ccg acc gat gtc agc ctg ggg gac gag ctc cac tta gac    816
Thr Ala Pro Pro Thr Asp Val Ser Leu Gly Asp Glu Leu His Leu Asp
            260                 265                 270
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ggc gag gac gtg gcg atg gcg cat gcc gac gcg cta gac gat ttc gat    864
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ctg gac atg ttg ggg gac ggg gat tcc ccg ggt ccg gga ttt acc ccc    912
Leu Asp Met Leu Gly Asp Gly Asp Ser Pro Gly Pro Gly Phe Thr Pro
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cac gac tcc gcc ccc tac ggc gct ctg gat atg gcc gac ttc gag ttt    960
His Asp Ser Ala Pro Tyr Gly Ala Leu Asp Met Ala Asp Phe Glu Phe
305             310             315             320

gag cag atg ttt acc gat ccc ctt gga att gac gag tac ggt ggg        1005
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<213> Herpes Simplex Virus

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Lys Leu Gly Val Glu Gln Pro Thr Leu Tyr Trp His Val Lys Asn Lys
        35              40              45
Arg Ala Leu Leu Asp Ala Leu Ala Ile Glu Met Leu Asp Arg His His
    50              55              60
Thr His Phe Cys Pro Leu Glu Gly Glu Ser Trp Gln Asp Phe Leu Arg
65              70              75              80
Asn Lys Ala Lys Ser Phe Arg Cys Ala Leu Leu Ser His Arg Asp Gly
            85              90              95
Ala Lys Val His Leu Gly Thr Arg Pro Thr Glu Lys Gln Tyr Glu Thr
        100             105             110
Leu Glu Asn Gln Leu Ala Phe Leu Cys Gln Gln Gly Phe Ser Leu Glu
        115             120             125
Asn Ala Leu Tyr Ala Leu Ser Ala Val Gly His Phe Thr Leu Gly Cys
    130             135             140
Val Leu Glu Asp Gln Glu His Gln Val Ala Lys Glu Glu Arg Glu Thr
145             150             155             160
Pro Thr Thr Asp Ser Met Pro Pro Leu Leu Arg Gln Ala Ile Glu Leu
            165             170             175
Phe Asp His Gln Gly Ala Glu Pro Ala Phe Leu Phe Gly Leu Glu Leu
        180             185             190
Ile Ile Cys Gly Leu Glu Lys Gln Leu Lys Cys Glu Ser Gly Ser Ala
        195             200             205
Tyr Ser Arg Ala Arg Thr Lys Asn Asn Tyr Gly Ser Thr Ile Glu Gly
    210             215             220
Leu Leu Asp Leu Pro Asp Asp Ala Pro Glu Glu Ala Gly Leu Ala
225             230             235             240
Ala Pro Arg Leu Ser Phe Leu Pro Ala Gly His Thr Arg Arg Leu Ser
            245             250             255

Thr Ala Pro Pro Thr Asp Val Ser Leu Gly Asp Glu Leu His Leu Asp
            260             265             270
Gly Glu Asp Val Ala Met Ala His Ala Asp Ala Leu Asp Asp Phe Asp
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            275                 280                 285
Leu Asp Met Leu Gly Asp Gly Asp Ser Pro Gly Pro Gly Phe Thr Pro
      290                 295                 300
His Asp Ser Ala Pro Tyr Gly Ala Leu Asp Met Ala Asp Phe Glu Phe
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Glu Gln Met Phe Thr Asp Pro Leu Gly Ile Asp Glu Tyr Gly Gly
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<213> Herpes Simplex Virus

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Met Ser Arg Leu Asp Lys Ser Lys Val Ile Asn Ser Ala Leu Glu Leu
  1               5                  10                  15

ctt aat gag gtc gga atc gaa ggt tta aca acc cgt aaa ctc gcc cag    96
Leu Asn Glu Val Gly Ile Glu Gly Leu Thr Thr Arg Lys Leu Ala Gln
                  20                  25                  30

aag cta ggt gta gag cag cct aca ttg tat tgg cat gta aaa aat aag   144
Lys Leu Gly Val Glu Gln Pro Thr Leu Tyr Trp His Val Lys Asn Lys
              35                  40                  45

cgg gct ttg ctc gac gcc tta gcc att gag atg tta gat agg cac cat   192
Arg Ala Leu Leu Asp Ala Leu Ala Ile Glu Met Leu Asp Arg His His
      50                  55                  60

act cac ttt tgc cct tta gaa ggg gaa agc tgg caa gat ttt tta cgt   240
Thr His Phe Cys Pro Leu Glu Gly Glu Ser Trp Gln Asp Phe Leu Arg
 65                  70                  75                  80

aat aac gct aaa agt ttt aga tgt gct tta cta agt cat cgc gat gga   288
Asn Asn Ala Lys Ser Phe Arg Cys Ala Leu Leu Ser His Arg Asp Gly
                  85                  90                  95

gca aaa gta cat tta ggt aca cgg cct aca gaa aaa cag tat gaa act   336
Ala Lys Val His Leu Gly Thr Arg Pro Thr Glu Lys Gln Tyr Glu Thr
                 100                 105                 110

ctc gaa aat caa tta gcc ttt tta tgc caa caa ggt ttt tca cta gag   384
Leu Glu Asn Gln Leu Ala Phe Leu Cys Gln Gln Gly Phe Ser Leu Glu
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           115                      120                      125

aat gca tta tat gca ctc agc gct gtg ggg cat ttt act tta ggt tgc   432
Asn Ala Leu Tyr Ala Leu Ser Ala Val Gly His Phe Thr Leu Gly Cys
    130                 135                 140

gta ttg gaa gat caa gag cat caa gtc gct aaa gaa gaa agg gaa aca   480
Val Leu Glu Asp Gln Glu His Gln Val Ala Lys Glu Glu Arg Glu Thr
145                 150                 155                 160

cct act act gat agt atg ccg cca tta tta cga caa gct atc gaa tta   528
Pro Thr Thr Asp Ser Met Pro Pro Leu Leu Arg Gln Ala Ile Glu Leu
                165                 170                 175

ttt gat cac caa ggt gca gag cca gcc ttc tta ttc ggc ctt gaa ttg   576
Phe Asp His Gln Gly Ala Glu Pro Ala Phe Leu Phe Gly Leu Glu Leu
            180                 185                 190

atc ata tgc gga tta gaa aaa caa ctt aaa tgt gaa agt ggg tct gat   624
Ile Ile Cys Gly Leu Glu Lys Gln Leu Lys Cys Glu Ser Gly Ser Asp
            195                 200                 205

cca tcg ata cac acg cgc aga ctg tcg acg gcc ccc ccg acc gat gtc   672
Pro Ser Ile His Thr Arg Arg Leu Ser Thr Ala Pro Pro Thr Asp Val
    210                 215                 220

agc ctg ggg gac gag ctc cac tta gac ggc gag gac gtg gcg atg gcg   720
Ser Leu Gly Asp Glu Leu His Leu Asp Gly Glu Asp Val Ala Met Ala
225                 230                 235                 240

cat gcc gac gcg cta gac gat ttc gat ctg gac atg ttg ggg gac ggg   768
His Ala Asp Ala Leu Asp Asp Phe Asp Leu Asp Met Leu Gly Asp Gly
                245                 250                 255

gat tcc ccg ggt ccg gga ttt acc ccc cac gac tcc gcc ccc tac ggc   816
Asp Ser Pro Gly Pro Gly Phe Thr Pro His Asp Ser Ala Pro Tyr Gly
                260                 265                 270

gct ctg gat atg gcc gac ttc gag ttt gag cag atg ttt acc gat gcc   864
Ala Leu Asp Met Ala Asp Phe Glu Phe Glu Gln Met Phe Thr Asp Ala
                275                 280                 285

ctt gga att gac gag tac ggt ggg ttc tag                           894
Leu Gly Ile Asp Glu Tyr Gly Gly Phe
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<212> PRT
<213> Herpes Simplex Virus

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            20                  25                  30
Lys Leu Gly Val Glu Gln Pro Thr Leu Tyr Trp His Val Lys Asn Lys
        35                  40                  45
Arg Ala Leu Leu Asp Ala Leu Ala Ile Glu Met Leu Asp Arg His His
    50                  55                  60
```

```
Thr His Phe Cys Pro Leu Glu Gly Glu Ser Trp Gln Asp Phe Leu Arg
65              70              75                      80
Asn Asn Ala Lys Ser Phe Arg Cys Ala Leu Leu Ser His Arg Asp Gly
            85              90                      95
Ala Lys Val His Leu Gly Thr Arg Pro Thr Glu Lys Gln Tyr Glu Thr
        100             105             110
Leu Glu Asn Gln Leu Ala Phe Leu Cys Gln Gln Gly Phe Ser Leu Glu
        115             120             125
Asn Ala Leu Tyr Ala Leu Ser Ala Val Gly His Phe Thr Leu Gly Cys
    130             135             140
Val Leu Glu Asp Gln Glu His Gln Val Ala Lys Glu Glu Arg Glu Thr
145             150             155                     160
Pro Thr Thr Asp Ser Met Pro Pro Leu Leu Arg Gln Ala Ile Glu Leu
            165             170             175
Phe Asp His Gln Gly Ala Glu Pro Ala Phe Leu Phe Gly Leu Glu Leu
        180             185             190
Ile Ile Cys Gly Leu Glu Lys Gln Leu Lys Cys Glu Ser Gly Ser Asp
        195             200             205
Pro Ser Ile His Thr Arg Arg Leu Ser Thr Ala Pro Pro Thr Asp Val
    210             215             220
Ser Leu Gly Asp Glu Leu His Leu Asp Gly Glu Asp Val Ala Met Ala
225             230             235                     240
His Ala Asp Ala Leu Asp Asp Phe Asp Leu Asp Met Leu Gly Asp Gly
            245             250             255
Asp Ser Pro Gly Pro Gly Phe Thr Pro His Asp Ser Ala Pro Tyr Gly
        260             265             270
Ala Leu Asp Met Ala Asp Phe Glu Phe Glu Gln Met Phe Thr Asp Ala
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Leu Gly Ile Asp Glu Tyr Gly Gly Phe
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<213> Human cytomegalovirus

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tgatagagaa aagtgaaagt cgagtttacc actccctatc agtgatagag aaaagtgaaa 300
gtcgagctcg gtacccgggt cgagtaggcg tgtacggtgg gaggcctata taagcagagc 360
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aagacaccgg gaccgatcca gcctccgcgg 450
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<210> 6
<211> 450
<212> DNA
<213> Human cytomegalovirus

<220>
<221> mRNA
<222> (382)...(450)

<400> 6
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tttcactttt ctctatcact gatagggagt ggtaaactcg actttcactt ttctctatca 300
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aagacaccgg gaccgatcca gcctccgcgg 450
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<212> DNA
<213> Herpes Simplex Virus

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<212> DNA
<213> Herpes Simplex Virus

<400> 8
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<212> DNA
<213> Herpes Simplex Virus

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<213> Herpes Simplex Virus

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<210> 11
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<213> Artificial Sequence

<220>
<223> linker peptides

<400> 11

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<210> 12
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<212> PRT
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<220>
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<400> 12
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<212> PRT
<213> Artificial Sequence

<220>
<223> linker peptides

<400> 13
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<210> 14
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<220>
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